AMENDED CLAIMS

1. (Currently amended) A method ~~for~~ of making measurements during drilling of a borehole, the method comprising:

   (a) making measurements continuously with a formation evaluation (FE) sensor on a bottom hole assembly (BHA);

   (b) concurrently making quality control (QC) measurements while said FE measurements are being made, said QC measurements including at least one measurement not related to motion of said BHA;

   (c) storing samples of said FE measurements in a working memory of a processor on said BHA;

   (d) analyzing said QC measurements; and

   (e) based on said analysis, storing selected samples of said FE measurements in a permanent memory of said processor.

2. (Original) The method of claim 1 wherein said FE sensor comprises at least one hydrophone responsive to a seismic signal from a surface source.

3. (Original) The method of claim 1 wherein said FE sensor comprises at least one geophone, said at least one geophone responsive to a seismic signal from a surface source.

4. (Currently amended) The method of claim 1 wherein said at least one QC measurement is selected from (i) a weight on bit (WOB), (ii) flow rate of a fluid in said borehole, (iii) a level of a tube wave in said borehole, (iv) a level of motion

of a non-rotating sleeve on said BHA, and (v) a measurement made by a near bit accelerometer.

5. (Original) The method of claim 1 wherein said QC measurements further comprise a measurement of motion of said BHA.

6. (Original) The method of claim 1 wherein said FE sensor comprises an accelerometer responsive to a signal from a surface source.

7. (Original) The method of claim 1 wherein said FE sensor comprises an acoustic sensor responsive to a signal from a source in another borehole.

8. (Currently amended)A method ~~for~~ of making measurements during drilling of a borehole, the method comprising:

(a) making quality control (QC) measurements using a sensor on a bottom hole assembly BHA during drilling of said borehole, said QC measurements including at least one measurement not related to a motion of said BHA;

(b) analyzing said QC measurements;

(c) using the results of the analysis for predicting an initial time when measurements made by a formation evaluation (FE) sensor on said BHA are expected to be of acceptable quality; and

(d) making measurements with said FE sensor over a time interval that starts earlier than said initial time; and

(e) recording the measurements made with the FE sensor.

9. (Original) The method of claim 1 wherein said FE sensor comprises an acoustic sensor responsive to a signal from a source at at least one of (i) a surface location, and, (ii) in another borehole.

10. (Original) The method of claim 1 wherein said acoustic sensor is one of (i) a hydrophone, (ii) a geophone, and, (iii) an accelerometer.

11. (Original) The method of claim 8 wherein said predicting is based at least in part on measurements made by an axial accelerometer on the BHA.

12. (Original) The method of claim 8 wherein said predicting is based at least in part on monitoring of a mud flow in said borehole.

13. (New) An apparatus for making measurements during drilling of a borehole, the apparatus comprising:

(a) a formation evaluation (FE) sensor on a bottom hole assembly (BHA) configured to make measurements continuously;

(b) at least one sensor configured to concurrently make quality control (QC) measurements while said FE measurements are being made, said QC measurements including at least one measurement not related to motion of said BHA; and

(c) a processor on the BHA configured to:

(I) store samples of said FE measurements in a working memory;

(II) analyze the QC measurements; and

(III) based on the analysis, store selected samples of said FE measurements in a permanent memory.

14. (New) The apparatus of claim 13 wherein said FE sensor is selected from the group consisting of: (i) a hydrophone responsive to a seismic signal from a surface source, (ii) a geophone responsive to a seismic signal from a surface source, (iii) an accelerometer response to a signal from a surface source, and (iv) an acoustic sensor responsive to a signal from a surface source, and (v) an acoustic sensor responsive to a signal from a source in another borehole.

15. (New) The apparatus of claim 13 wherein said at least one sensor is configured to be responsive to at least one of: (i) a weight on bit (WOB), (ii) a flow rate of a fluid in said borehole, (iii) a level of a tube wave in said borehole, (iv) a level of motion of a non-rotating sleeve on said BHA, and (v) a measurement made by a near bit accelerometer.

16. (New) The apparatus of claim 13 wherein said QC measurements further comprise a measurement of motion of said BHA.

17. (New) an apparatus for making measurements during drilling of a borehole, the method comprising:

(a) a sensor on a bottomhole assembly (BHA) configured to make quality control (QC) measurements during drilling of said borehole, said QC measurements including at least one measurement not related to a motion of said BHA;

(b) a processor configured to:

(I) analyze said QC measurements;

(II) use the results of the analysis for predicting an initial time when measurements made by a formation evaluation (FE) sensor on said BHA are expected to be of acceptable quality; and

(III) record measurements with said FE sensor over a time interval that starts earlier than said initial time.

18. (New) The apparatus of claim 17 wherein the processor is configured to do said predicting based at least in part on measurements made by an axial accelerometer on the BHA.

19. (New) The apparatus of claim 17 wherein the processor is configured to do said predicting is based at least in part on monitoring of a mud flow in said borehole.